

# **Site Descriptions of High-Quality Wetlands Derived from Existing Literature Sources**

Prepared for:  
The Montana Department  
of Environmental Quality

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Montana Natural Heritage Program  
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## Appendix A. Global/State Rank Definitions

## Introduction

Although the Montana Natural Heritage Program (MTNHP) has pursued an active program of field investigations to identify and sample high quality wetlands and riparian areas, there has been considerable inventory conducted by other qualified investigators of various affiliations. MTNHP proposed to assemble available wetland/riparian data from major sources, review it, extract relevant information, and make extracted information publicly available via our web site. It should be emphasized that we are not merely repackaging information; we are gleaning, interpreting and assessing information so as to identify and describe only the highest quality wetlands

We placed an emphasis on collecting information from western Montana (west of the Continental Divide, or in the near vicinity of, if east of it) because the results would inform ongoing field investigations in this area, prevent overlapping sampling, and place recent and ongoing field results in a larger ecological context. Following consultation with The Wetland Council, we determined priority data sources reviewed to be special reports (particularly inventories) prepared for the Montana Field Office of The Nature Conservancy, research conducted by university scientists, the plot database of Riparian and Wetland Research Program at the School of Forestry, University of Montana, U.S. Forest Service peatland inventories, and existing records in the MTNHP plots database.

## Methods

Each of the following headings in the report constitute fields that will be populated in a MTNHP database by information extracted from a given data source for a single site:

- **Site Name:** Either listed as the project name or chosen to be representative of a given locality.
- **Directions:** A general location and regional setting within the state is presented and then follows a detailed description of the most convenient way to access the site (with accompanying mileages from prominent locations). To avoid trespass issues, it was noted whether a site was located either wholly or partly on private lands.
- **Description:** This field describes the physiographic setting and unique landscape features, if any. A narrative follows enumerating the plant communities present and describing their environmental setting and species composition. A concerted effort was made to crosswalk communities to the National Vegetation Classification System (NVCS), a standardized system used to facilitate inventory, communication and extrapolation of results.
- **Key Environmental Factors:** This field relates to the immediate wetland or riparian area and not its landscape context (see Land Use). Considering that this project is focused on wetlands and riparian areas the primary driving variables of community structure and composition almost invariably relate to hydrology. Often this field contains conjecture (explicitly stated) because hard data on hydrology is seldom recorded or is reported from a one-time visit and can extend to off-site considerations, such as a flow regulation by an upstream dam. Other factors may be relevant such as browsing by herbivores (e.g., beavers) that could alter composition and structure.
- **Rarity:** Noted here are all rare elements tracked by the MTNHP including species (plants, both vascular & non-vascular, and animals) and communities. Element degree of imperilment may be found in “Plant Species of Concern” and “Animal Species of Concern” (distributed by the MTNHP).
- **Other Values:** This field addresses the overall significance of the wetland/riparian area and places it into regional or state context in terms of unique communities, their extent (size) and condition.
- **Land Use:** Usually pertains to man’s manipulation of the environment/landscape, such as farming, tree harvesting, and livestock operations.

- **Exotics:** Both noxious weeds and exotic (introduced) species are noted, including seeded “pasture” grasses (e.g., *Phleum pratense* (timothy), *Poa pratensis* (Kentucky bluegrass) and *Bromus inermis* (smooth brome)). This field can have strong bearing on the overall significance of the wetland as a conservation area. Baring wholesale development, exotics are potentially the greatest threat to species diversity and ecosystem function.
- **Uplands:** These systems provide the context for the embedded wetlands; if the uplands are severely impacted, then embedded wetlands will also likely be degraded.
- **Information Needs:** All degrees of inventory intensity were encountered; sometimes communities were noted by name but their composition not documented and, most significantly, the exotic populations were not documented. Often upland land practices, condition, or exotic populations were not documented, all of which have a distinct bearing on the wetland’s viability.
- **Management Needs:** This field is often tied to “Information Needs” because additional data is often necessary before management recommendations can be made.
- **Source:** A full citation is given for the literature or origin of the information from which this depiction and analysis was abstracted; source abstract number assigned by MTNHP is cited.

## Results

The Wetland Council queried key wetland experts and scientists to identify priority and perhaps overlooked wetland data sources: no unanticipated data sources surfaced and the above-cited sources were targeted for data extraction and analysis. The targeted data sources were contacted and the appropriate documents were acquired. The most relevant, prolific, and reputable sources were inventories conducted by Peter Lesica for The Nature conservancy; these documents largely resided as hardcopy reports on file with the Montana Field Office of TNC. An anticipated source, the plot files of the Riparian and Wetland Research Program proved to be not so fruitful because it consisted of plots and not sites; only with considerable difficulty could it be determined whether the plot was representative of a greater whole that would constitute a site.

Twenty-six high-quality wetland sites were identified and described. Most of these occurred in western Montana, although wetlands in north central and northeastern Montana are also represented (Figure 1).